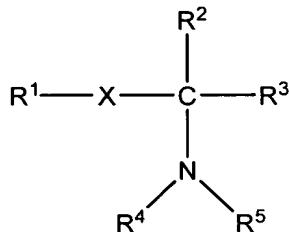


AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Original) A compound corresponding to formula (I)



in which

- R^1 is a functional group capable of reacting with the functions present on proteins, antibodies or on mineral or organic materials;
- X represents a single bond or a hydrocarbon-based chain consisting of at least one group chosen from alkylene groups and alkenylene groups optionally comprising at least one hetero atom, and from arylene groups;
- R^2 is a group A^2 that is anionic at neutral pH or an alkylene or alkenylene group containing from 1 to 4 carbon atoms and bearing at least one such group A^2 , said alkylene or alkenylene group optionally comprising at least one hetero atom in the chain;
- R^3 represents H or an alkylene or alkenylene group containing from 1 to 5 carbon atoms and optionally containing at least one hetero atom in the chain, said group optionally bearing at least one group A^3 that is anionic at neutral pH;
- R^4 is chosen from the groups corresponding to the formula $-(C)_n-C-Z^1-C-C-Z^2-C-A^4$ in which n is equal to 1 or 2, Z^1 and Z^2 represent, independently of each other, a hetero atom chosen from O and N, at least one being a nitrogen atom forming part of an aromatic heterocycle with the two carbon atoms surrounding it, and A^4 is a group that is anionic at neutral pH, in which the atom bearing the anionic charge is in the γ position relative to Z^2 ;
- R^5 is chosen from the groups defined for R^4 or from groups corresponding to the formula $-C-C-E^1-C-C-E^2-C-A^5$ in which E^1 and E^2 represent, independently of each other,

a hetero atom chosen from O and N, and A⁵ is a group that is anionic at neutral pH, in which the atom bearing the anionic charge is in the γ position relative to E².

2. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein~~ the substituent R¹ is chosen selected from the group consisting of amino, thio, cyano, isocyano, acridinyl, hydrazino, haloacetate, anhydride, triazo, carbonyl, nitrobenzoyl, sulfonyl, thionyl, halide, epoxide, aldehyde, imidazole, hydroxyphenyl, mercapto, N-succinimidyl ester, N-sulfosuccinimidyl ester, maleimido, hydroxyl, carboxyl, thiocyanato, and isothiocyanato groups.

3. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein~~ the substituent R² is a group A² that is anionic at neutral pH.

4. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein~~ the substituent R³ is H or a C₁ to C₃ alkyl.

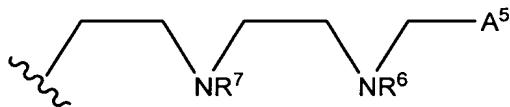
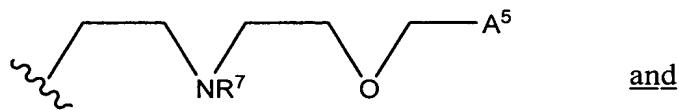
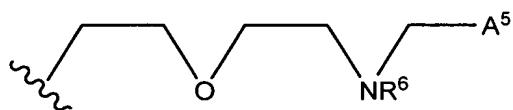
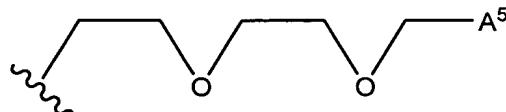
5. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein~~ the groups Z¹ and Z² of R⁴ form part of an aromatic heterocyclic group.

6. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein~~ n is equal to 1.

7. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein~~ one of the segments -C-Z¹-C- or -C-Z²-C- forms part of a heterocyclic group chosen from pyridyl, pyrimidinyl, quinolyl and isoquinolyl groups.

8. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein~~ the segment -C-Z¹-C-C-Z²-C- is chosen selected from the group consisting of 2,2'-bipyridinyl, 1,10-phenanthrolinyl, 2,2'-bisquinolyl, 2,2'-bisisoquinolyl and 2,2'-bipyrimidinyl groups, said groups possibly bearing alkyl or alkoxy substituents on at least one carbon atom of a heterocycle.

9. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein R⁵ is selected chosen from the group consisting of following groups:~~



in which R⁶ and R⁷ represent alkyl chains containing from 1 to 5 carbon atoms and optionally containing one or more hetero atoms.

10. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein R⁴ and R⁵ are identical.~~

11. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein the groups A², A³, A⁴ and/or A⁵ that are anionic at neutral pH are chosen, independently of each other, from -CO₂H, -SO₃H, -P(O)(OR)OH, -P(O)R(OH) and -P(O)(OH)₂ groups in which R is an alkyl group or an aryl group.~~

12. (Currently Amended) The compound as claimed in claim 1,
~~characterized in that wherein the compound is in cationic form, the nitrogen bearing the~~

substituents R⁴ and R⁵, and also possibly the hetero atoms Z¹, Z², E¹ and E², being in protonated form.

13. (Currently Amended) The compound as claimed in claim 1, ~~characterized in that wherein the compound~~ it is in anionic form, the various groups Aⁱ being in the form of salts.

14. (Currently Amended) The compound as claimed in claim 1, ~~characterized in that wherein the compound~~ it is in zwitterionic form, the nitrogen bearing the substituents R⁴ and R⁵, and also possibly the hetero atoms Z¹, Z², E¹ and E², being in protonated form, and the various groups Aⁱ being in the form of salts.

15. (Currently Amended) The compound as claimed in claim 1, ~~characterized in that wherein~~ X is an arylene group comprising one or more fused or unfused aromatic nuclei, said nucleus (nuclei) optionally bearing one or more aliphatic hydrocarbon-based groups.

16. (Currently Amended) The compound as claimed in claim 1, ~~characterized in that wherein~~ the group X is an alkylene or alkenylene group containing from 1 to 10 carbon atoms.

17. (Currently Amended) The compound as claimed in claim 1, ~~characterized in that wherein~~ the group X is an arylene group containing from 5 to 10 carbon atoms.

18. (Currently Amended) A process for preparing a lanthanide complex, ~~characterized in that it consists in comprising:~~ reacting a compound (I) as claimed in ~~any one of claims 1 to 17~~ claim 1 with a compound giving a lanthanide cation.

19. (Currently Amended) The process as claimed in claim 18, ~~characterized in that wherein~~ the compound giving a lanthanide cation is ~~chosen~~ selected

from the group consisting of lanthanide halide hydrates, lanthanide nitrate hydrates, lanthanide carbonates and lanthanide triflates.

20. (Currently Amended) The process as claimed in claim 18, characterized in that wherein the reaction is performed in solution in a solvent chosen selected from the group consisting of water, methanol, ethanol and acetonitrile.

21. (Currently Amended) The process as claimed in claim 18, characterized in that wherein compound (I) is reacted with the lanthanide ion precursor in a mixture of methanol and water at a pH ranging from 3 to 5, for a time of between 10 minutes and 24 hours, at a temperature of between 25°C and 80°C, and the pH of the solution is then adjusted to 7.0 and the methanol is evaporated off.

22. (Currently Amended) A complex obtained via a process as claimed in claim 18, wherein the complex comprises consisting of a lanthanide ion Ln complexed with a ligand corresponding to a compound formula (I).

23. (Currently Amended) The complex as claimed in claim 22, characterized in that wherein the lanthanide ion is chosen selected from the group consisting of from europium, terbium, samarium, dysprosium, erbium, ytterbium, neodymium and gadolinium ions.

24. (Currently Amended) The complex as claimed in claim 22, characterized in that wherein the substituent R⁴ of the compound of formula (I) is -C-C-Z¹-C-C-Z²-C-A⁴, the 3 chelate rings being formed between the lanthanide cation and, respectively:

- the N atom bearing R⁴ and R⁵, Z¹ and the carbon atoms that separate them;
- Z¹, Z² and the two carbon atoms that separate them;
- the end segment Z²-C-A⁴.

25. (Currently Amended) The complex as claimed in claim 24, characterized in that wherein the substituent R⁵ is of the same type as the substituent R⁴.

26. (Currently Amended) The complex as claimed in claim 24, ~~characterized in that wherein~~ the substituent R^5 is of the type $-C-C-E^1-C-C-E^2-C-A^5$, three 5-membered chelate rings being formed between the lanthanide cation and, respectively:

- the N atom bearing R^4 and R^5 , E^1 and the two carbon atoms that separate them;
- E^1 , E^2 and the two carbon atoms that separate them;
- the end segment E^2-C-A^5 .

27. (Currently Amended) A process for the quantitative or qualitative analysis of a compound, ~~characterized in that it consists in comprising:~~ covalently bonding to said compound a marker consisting of a complex as claimed in ~~one of claims 25 to 29 claim 25~~, and ~~in~~ detecting or quantifying the presence of the marked compound by means of the luminescence properties of the marker.

28. (Currently Amended) The process as claimed in claim 27, ~~characterized in that wherein~~ the complex is a europium, terbium, samarium or dysprosium complex.

29. (Currently Amended) The process as claimed in claim 27, ~~characterized in that wherein~~ the substituent R^1 of the complex is ~~chosen selected~~ from amino, thio and carboxyl groups or from maleimido, N-succinimidyl ester and isothiocyanato groups.

30. (Currently Amended) A relaxation agent for nuclear magnetic resonance, consisting of a complex as claimed in ~~one of claims 22 to 26 claim 22~~.

31. (Currently Amended) The relaxation agent as claimed in claim 30, ~~characterized in that wherein the complex is it consists of~~ a gadolinium, europium or dysprosium complex.

32. (Currently Amended) The relaxation agent as claimed in claim 30, ~~characterized in that wherein the complex is it consists of~~ a complex in which the substituent

R^1 is ~~chosen~~ selected from amino, thio and carboxyl groups or from maleimido, N-succinimidyl ester and isothiocyanato groups.